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Impact of Skin to Skin Contact Implemented in the Operating Room

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Executive Summary

Healthcare is constantly advancing and adapting to provide the latest evidence-based care for patients and their families. This has become especially true with families deciding where they want to deliver their babies. Family Centered Maternity Care (FCMC) has become the leading force behind providing care for women and their babies in the hospital setting (Zwelling & Phillips, 2001). One of the main nursing practices promoted under FCMC is that of mother-baby couplet care. The main goal of couplet care is to keep mothers and babies together throughout their hospital stay. This type of care also provides stability and consistency in nursing care by having one nurse for both patients.

While keeping mothers and babies together has become the main goal, there is still room for improvement in this area of practice. One such area is keeping mothers and babies together after a cesarean section delivery instead of separating until the mother is out of the operating room. Mothers who have to deliver via cesarean section should be afforded the same benefits as mothers who have a vaginal delivery. After a vaginal delivery the newborn is placed immediately on the mother's chest to start skin to skin contact (SSC). This is not true for mothers who have a cesarean section.

A program change needs to be implemented to provide mothers who have a cesarean section delivery SSC with their newborn while still in the operating room. This process change will require educating the staff on how to implement SSC in the operating room. Once the staff have been educated, the program will be tracked for 90 days to evaluate the new process change. This evaluation will include the percentage of successful initiation of SSC in the operating room and how this change has affected the outcomes for both mothers and babies in this population.

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Information about the Project

As expectant mothers are becoming more educated about the birthing process, organizations need to adjust current practices in order to better meet the labor and delivery needs and desires of this patient population. Many new mothers have turned to having their babies in birthing centers because they do not want to be separated from their newborns after birth. One way that mothers start to bond with their newborns is through the initiation of immediate skin to skin contact (SSC). SSC has many benefits that have shown to improve the outcomes for both the mothers and newborns and should be provided to all mothers regardless of method of delivery. While the hospital has become better at implementing SSC after vaginal deliveries, it is still lacking in providing the same to mother's who deliver via cesarean section.

Rationale for the Project

The hospital has implemented one hour of uninterrupted SSC after vaginal deliveries but has yet to establish this practice for cesarean section deliveries. In newborns who are delivered via cesarean section (P), how does the process of implementing immediate skin to skin contact in the operating room (I) compared to delayed or no skin to skin contact (C) affect newborn outcomes (O) over a three-month period (T)?

Immediately after birth, newborns begin to form bonds with those around them. One of the most effective methods for a newborn to bond with parents is through SSC. Newborns also work hard to maintain their heart rate, temperatures, respiratory rate, blood sugar and establish breastfeeding in the first few hours after birth. Latest evidence-based practice has proven that immediate SSC following delivery can help newborns to begin to regulate all their vitals and establish breastfeeding sooner than newborns who did not get SSC (Moore, Bergman, Anderson & Medley, 2016).

Goals

Healthcare is always moving forward and changing as new information is learned. When a process change is going to be implemented a goal needs to be established. A goal is set to show what the desired result for the process change should be. Setting a goal is one of the most important aspects for implementing change (Melnyk & Fineout-Overholt, 2015, p. 316). The main goal for this change process is to improve newborn outcomes by providing immediate SSC after a cesarean section delivery. Another goal of this process change is to start the bonding process between the mother and newborn as soon as possible. This process change will be measured by how soon after delivery SSC was established and how long it lasted. The other information that will be measured will be how long it will take the newborn to reach stable vital signs after SSC is initiated. These measurements will help to show that the overall goal of SSC in the operating room is to improve newborn outcomes.

Detailed Discussion of the Literature

Information about how newborn outcomes are improved with the implementation of SSC while still in the operating room has a limited number of articles on the topic. While there are many studies showing the benefits of SSC for newborns most of the articles only discuss in relation to vaginal deliveries. As the rate of cesarean section deliveries increase, more research has begun to take place on the effects of cesarean section deliveries on the newborn. Some of the articles that discussed the benefits of SSC immediately following a cesarean section delivery were reviewed here.

Beiranvand (2014) published an article on the effects of SSC on newborn temperature regulation following cesarean section. In this article it discussed how early implementation of SSC while the mother is still in the operating room had a positive effect on the newborn's

temperature regulation. Beiranvand (2014) studied two groups of newborns, those who had immediate SSC and a second group who had delayed SSC until the mother was out of the operating room. The study showed that the newborns who received the immediate SSC were able to regulate their temperature faster than the delayed group. This article was used to show how SSC helps newborns to regulate their temperature following cesarean section delivery.

Kollmann (2017) conducted a randomized control pilot study on the effect that early SSC has on the newborn and maternal outcomes following a cesarean section. Main variables investigated were neonatal transition (Apgar score, arterial oxygen saturation, heart rate and temperature), maternal pain perception and both maternal and neonatal stress response by measuring the stress biomarkers salivary free cortisol and salivary alpha amylase (Kollmann, 2017). The pilot study showed that early SSC had improved outcomes for newborns. At the conclusion of the study it should be that mothers' stress level was the same whether SSC was started early or delayed.

Grassley and Jones (2014) found that with proper education on the process of conducting SSC in the operating room both mothers and newborns can see the benefit. This article discusses the feasibility of implementing SSC in the operating room. The key to success is to ensure that staff felt comfortable with implementing SSC in the operating room through proper education (Grassley & Jones, 2014).

The last article was a literature review of immediate or early SSC after cesarean section (Stevens, Schmied, Burns, & Dahlen, 2014). This literature review compiled all the articles that address SSC in the operating room. This review helped to show many articles that promoted SSC in the operating room. In conclusion, the early intervention of SSC in the operating room had a beneficial outcome to newborns.

Many of the articles showed that if SSC was initiated immediately or early after cesarean section delivery, the newborn was able to maintain a normal range vital signs at one hour of life better then newborns who do not have skin to skin contact.

Project Stakeholders

Stakeholders are important to any project that needs to be implemented within a healthcare system. The process of implementation of SSC in the operating room will need to have stakeholders from many levels within the organization in order to be successful. When deciding who to have as stakeholders for the implementation of a new project, these people need to have a buy-in to the project. Stakeholders are the ones that will be there to support the project, so their backing is the most important.

Stakeholders for this process change include the departments administrative team including the Vice President and Director, all of the obstetric physicians, anesthesia providers, nursing education department, front-line nursing staff responsible for implementation, and the patients themselves.

The department's administrative team will approve the process change within the department and provide guidance throughout the change. The obstetric and anesthesia providers will need to have buy-in and provide support to both the patient and the nursing staff during the operation process. Without their support, the initiation of SSC in the operating room cannot go as smoothly. The nursing education department will be needed to help support and promote the proper education to both the nursing staff and the patients. This included the department's clinical educator, the unit-based council members, and childbirth educators. The front-line nursing staff are one of the most important stakeholders in this change. They will be the ones to actually implement and follow through with patient education and initiation of SSC. Without the

proper buy-in from nurses, this process change cannot be successful. The overall most important stakeholders however are the patients themselves. This process change has the potential to affect their experience and outcomes for the better. All the stakeholders will have their role in order to make this process change successful.

Outcomes to be Measured

The outcomes that will be measured are how many newborns received a minimum of one hour of SSC starting in the operating room. The next measure that will be looked at is the newborn vital signs of those who received SSC versus the ones who did not have SSC. After reviewing this information, it will help to show how SSC improved the outcomes in the newborn. The information will be reviewed for a three-month time frame to see if it was effective. After the initial evaluation, a longer time frame will be needed to see if SSC should be maintained in the operating room as a permanent process change.

Evaluation Design

Implementation of SSC in the operating is being used to help improve the outcomes of newborns born via cesarean section. The way that this will be evaluated is by assessing the time SSC was started after delivery in the operating room. For SSC to be considered immediate it needs to be initiated within the first 15 minutes after delivery. A chart review will be conducted once a week for 30 days to see how often SSC was done in the operating room.

The newborns who received the full one hour of SSC will then have their vital signs assessed to see how quickly they entered normal range. Newborn vital signs are taken at 30, 60, and 90 minutes of life currently. This is how all newborns are assessed no matter their type of delivery. Another way to evaluate if SSC in the operating room is improving newborn outcomes

is to compare the vital signs of SSC versus no SSC group and see which ones normalized their vital signs faster.

Timetable/Flowchart

This process of implementing SSC in the operating room was presented to the department director in January 2020. The proposal was presented explaining the benefits of SSC in the operating to improve newborn and maternal outcomes. At this time the department director was looking for ideas that would help to improve current patient satisfaction scores. SSC was presented as one of the processes that could help to improve on patient satisfaction scores. The proposal explained how the process of SSC would be implemented after the staff was properly educated. The department director requested that the education provided be structured as online based or a one to one explanation approach.

The staff were provided education during the first two weeks of February and informed that this process change would go live at the end of the month. A video was uploaded to the staff education page on Teams. After viewing the video, the nursing staff were required to take a five-question quiz ensuring that the education was understood and completed. At the end of the two weeks, an email was sent out to the staff asking if they had any additional questions or concerns about the process of SSC being implemented in the operating room. Also, during the third week of February one on one training was offered to any staff that still had questions about the process change.

February 24, 2020 was the date set in place to start the implementation of SSC on scheduled cesarean section deliveries. There are typically two to four scheduled cesarean section deliveries each day. The mother's that were scheduled for this first day were informed during the pre-admission process that they would be starting their SSC while still in the operating room.

This was the process from this day forward that all mothers were informed about the new SSC procedure. Mothers have the opportunity to ask any additional questions at this time. The results are going to be reviewed every Friday for four weeks. On Monday March 16th the SSC process change was put on hold due to the COVID – 19 pandemic. In order to conserve the use of personal protective equipment (PPE) a support person was no longer allowed in the operating room. Without a support person there to assist the mother with SSC the process had to be placed on hold for the time being. Only three weeks of data was collected before the process was placed on hold. The process of SSC in the operating room will be reinstated as soon as the hold is lifted on the use of PPE. The date that this will happen is unknown currently.

Data Collection Methods

The number of scheduled cesarean sections varies from day to day. There are typically two to four schedule cesarean sections Monday thru Friday. No cesarean sections are scheduled on the weekend unless pre-approved by the anesthesia department. At the end of each week the scheduled cesarean sections for the past week were reviewed via the patients charts to see if SSC was started in the operating room. Other information collected from the charts during the review process include the newborn vital signs that were taken during the first four-hour postpartum recovery time. This information will be collected for four weeks to see if the new process was helping to improve newborn outcomes. Only three weeks of data was collected due to the COVID – 19 pandemic. The last week had no information collected due to changes in the operating room in order to reduce the amount of PPE used for each case.

Costs/Benefits

The costs for implementing this process change were minimal compared to the benefits the organization will gain. There was no additional cost to make the educational video because it

was shot by the unit-based council (UBC) during the monthly meeting, so staff did not have to work any additional hours for this part of the education process. The one-on-one training was also provided by members of the UBC during their scheduled shifts, so no additional hours were needed to pay staff for helping with the training process. Chart review is completed by the birth center's quality improvement nurse. This nurse is a part time employee who reviews charts and compiles data daily as part of her job assignment.

Implementation of SSC in the operating room will provide a long-term benefit for our mothers and their newborns. Once the process change of SSC in the operating room becomes common practice it will also help to improve patient satisfaction scores. Also, as these patients see the benefit of SSC, they will begin to tell others about how they were not separated from newborns. Word of mouth is a great form of advertisement that the hospital does not have to pay for. Another benefit received from SSC in the operating room is newborns spend less time in the hospital because they are able to adapt to life better. The benefits far out way the costs from implementing this process change

Overall Review

Over the three-week time frame that data was collected, 43 scheduled cesarean sections took place. Of those 43 scheduled cesarean sections 37 had SSC initiated in the operating room. This is an 83% completion rate for the first three weeks after the process changes were implemented. The six mothers who did not participate in the SSC were due to various reasons that were not charted at the time of delivery.

The next part that was evaluated was the review of newborn vital signs that were documented the first four hours after birth. Vital signs that were reviewed for newborns were

heart rate, temperature, respiratory rate, blood sugar and initiation of feeding. Upon reviewing the 37 newborns vital signs who had SSC in the operating room 29 of those newborns vital signs were within normal range limits by the end of the four-hour postpartum period. The other 8 newborns had issues related to blood sugar and respiratory issues that caused them to be admitted to the NICU. These results showed the 78% of the newborns stabilized as a result of SSC in the operating room.

Conclusion

Having a baby is one of the happiest days in a mother's life. Mothers who must have a cesarean section delivery should have the same experiences as mothers who have vaginal delivery. Implementing SSC in the operating room is one way that mothers and newborns will have a better outcome. Mothers and newborns start the bonding process soon after delivery and SSC is one way to help improve on this bonding process. As nurses in labor and delivery we should help to improve this bonding process.

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